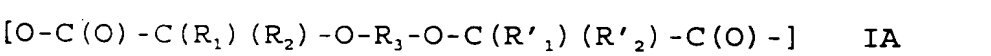
WE CLAIM:

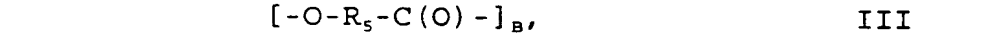
1. A method of preventing adhesion formation between tissues in an animal comprising placing a sterile adhesion prevention barrier between the tissues of the animal where the adhesion to be prevented wherein the sterile adhesion prevention barrier is formed from a polyoxaester having a first divalent repeating unit of formula IA:



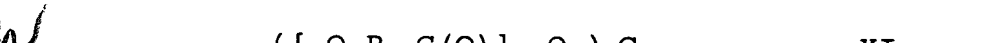
$$[O\text{-}C(O)\text{-}C(R_1)(R_2)\text{-}O\text{-}R_3\text{-}O\text{-}C(R'_1)(R'_2)\text{-}C(O)\text{-}] \quad \text{IA}$$

and a second repeating unit selected from the group of formulas consisting of:

$$[\text{-}O\text{-}R_4\text{-}]_A, \quad \text{II}$$

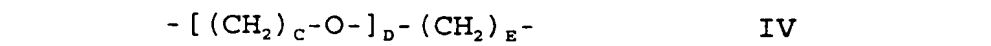


$$[\text{-}O\text{-}R_5\text{-}C(O)\text{-}]_B, \quad \text{III}$$



$$([\text{-}O\text{-}R_5\text{-}C(O)]_P\text{-}O\text{-})_L G \quad \text{XI}$$

and combinations thereof wherein R_1, R'_1, R_2 and R'_2 are independently hydrogen or an alkyl group containing 1 to 8 carbon atoms; R_3 is an alkylene unit containing from 2 to 12 carbon atoms or is an oxyalkylene group of the following formula:



$$-[(CH_2)_C\text{-}O\text{-}]_D\text{-}(CH_2)_E\text{-} \quad \text{IV}$$

wherein C is an integer in the range of from 2 to about 5, D is an integer in the range of from about 0 to about 2,000, and E is an integer in the range of from about 2 to about 5, except when D is zero, in which case E will be an integer from 2 to 12; R_4 is an alkylene unit containing from 2 to 8 carbon atoms ; A is an integer in the range of from 1 to 2,000; R_5 is selected from the group consisting of -$C(R_6)(R_7)$-, $-(CH_2)_3-O-$, $-CH_2-CH_2-O-CH_2-$, $-CR_8H-CH_2-$, $-(CH_2)_5-$, $-(CH_2)_F-O-C(O)-$ and $-(CH_2)_F-C(O)-CH_2-$; R_6 and R_7 are independently hydrogen or an alkyl containing from 1 to 8 carbon atoms; R_8 is hydrogen or methyl; F is an integer in the range of from 2 to 6; B is an integer in the range of from 1 to n such that the number average molecular weight of formula III is less than about 200,000; P is an integer in the range of from 1 to m such that the number average molecular weight of formula XI is less than about 1,000,000; G represents the residue minus from 1 to L hydrogen atoms from the hydroxyl groups of an alcohol previously containing from 1 to about 200 hydroxyl groups; and L is an integer from about 1 to about 200.

2. The method of claim 1 wherein additionally present is a third divalent repeating unit of the formula:

$$[-O-C(O)-R_{30}-C(O)-] \quad IB$$

wherein R_{30} is an alkylene, arylene, arylalkylene, substituted alkylene, substituted arylene and substituted alkylarylene provided that R_{30} cannot be $-[C(R_1)(R_2)]_{1-2}-O-(R_3)-O-[C(R'_1)(R'_2)]_{1-2}-$.

3. The method of claim 1 wherein the number average molecular weight of formula III contained in the polyoxaester is less than 100,000.

4. The method of claim 1 wherein the aliphatic polyoxaester has the following repeating units:

$[-O-C(O)-C(R_1)(R_2)-O-(R_3)-O-C(R_1)(R_2)C-(O)-]$ and $[(O-R_4)_A-]$.

5. The method of claim 1 wherein the aliphatic polyoxaester has the following repeating units:

$[O-C(O)-C(R_1)(R_2)-O-R_3-O-C(R_1)(R_2)-C(O)-]$;
$[-O-R_4-]_A$; and
$[O-R_5-C(O)-]_B$.

6. The method of claim 5 wherein R_3 is an oxyalkylene group.

7. The method of claim 6 wherein the first repeating unit is derived from a dicarboxylic acid selected from the group consisting of 3,6-dioxaoctanedioic acid, 3,6,9-trioxaundecanedioic acid and combinations thereof.

8. The method of claim 5 wherein the second repeating unit is derived from a diol selected from the group consisting of 1,2-ethandiol, 1,2-propandiol, 1,3-propandiol and combinations thereof.

9. The method of claim 5 wherein at least one of the second repeating unit is derived from ethylene glycol.

10. The method of claim 1 wherein at least one of the second repeating unit is derived from a lactone selected from the group consisting of glycolide, lactide, ε-caprolactone and combinations thereof.

11. The method of claim 7 wherein the polyoxaester has two second repeating units wherein one of the second repeating units is a diol selected from the group consisting of 1,2-ethandiol, 1,2-propandiol, 1,3-propandiol and combinations thereof and the other repeating unit is a lactone selected from the

group consisting of glycolide, lactide, ε-caprolactone and combinations thereof.

12. The method of claim 1 wherein the aliphatic polyoxaester has the following repeating units:

$[O\text{-}C(O)\text{-}C(R_1)(R_2)\text{-}O\text{-}R_3\text{-}O\text{-}C(R_1)(R_2)\text{-}C(O)\text{-}]$
$[\text{-}O\text{-}R_4\text{-}]_A$; and
$([\text{-}O\text{-}R_5\text{-}C(O)]_P\text{-}O\text{-})_L G$.

13. The method of claim 2 wherein the polyoxaester has the following repeating units:

$$[\text{-}O\text{-}C(O)\text{-}R_{30}\text{-}C(O)\text{-}],$$
$$[\text{-}O\text{-}R'_4]_{A'},$$
$$[O\text{-}C(O)\text{-}C(R_1)(R_2)\text{-}O\text{-}R_3\text{-}O\text{-}C(R'_1)(R'_2)\text{-}C(O)\text{-}],$$
$$[\text{-}O\text{-}R_4]_A, \text{ and}$$
$$[O\text{-}R_5\text{-}C(O)\text{-}]$$

wherein R_4 and R'_4 are independently selected from alkylene groups containing from 2 to 8 carbon atoms; A and A' are independently integers in the range of from 1 to about 2,000.

14. The method of claim 2 wherein the polyoxaester copolymer has the formula:

$$[-O-C(O)-R_{30}-C(O)-]$$
$$[-O-R'_4]_{A'}$$
$$[-O-C(O)-C(R_1)(R_2)-O-R_3-O-C(R'_1)(R'_2)-C(O)-]$$
$$[-O-R_4]_A-$$
$$([-O-R_5-C(O)]_P-O-)_LG$$

wherein R_4 and R'_4 are independently selected from alkylene groups containing from 2 to 8 carbon atoms; A and A' are independently integers in the range of from 1 to about 2,000.

15. The method of claim 1 wherein the polyoxaester copolymer is linked to one or more polymerizable regions.

16. The method of claim 1 wherein the polyoxaester copolymer has been crosslinked.

17. The method of claim 16 wherein the polyoxaester copolymer has been crosslinked by the addition of a coupling agent.

18. The method of claim 16 wherein the crosslinked polyoxaester copolymer has been contacted with water to form a hydrogel.

19. The method of claim 2 wherein the barrier is a film.

20. The method of claim 2 wherein the barrier is a foam.

21. The method of claim 2 wherein the barrier is a felt.

22. The method of claim 2 wherein the barrier is a gel.

23. The method of claim 2 wherein the barrier is a liquid.

24. The method of claim 1 wherein the polyoxaester is blended with a second polymer selected from the group consisting of homopolymer and copolymer of lactone type polymers with the repeating units described by formulas III and XI, aliphatic polyurethanes, polyether polyurethanes, polyester polyurethanes, polyethylene copolymers, polyamides, polyvinyl alcohols, poly(ethylene oxide), polypropylene oxide, polyethylene glycol, polypropylene glycol, polytetramethylene oxide, polyvinyl pyrrolidone, polyacrylamide, poly(hydroxy ethyl acrylate), poly(hydroxyethyl methacrylate), absorbable polyoxalates, absorbable polyanhydrides and combinations thereof.

25. A aliphatic polyoxaester having a first repeating unit of the formula:

$$[O\text{-}C(O)\text{-}C(R_1)(R_2)\text{-}O\text{-}R_3\text{-}O\text{-}C(R_1)(R_2)\text{-}C(O)\text{-}]$$

and a second repeating units are

$[-O-R_4-]_A$; and

$[O-R_5-C(O)-]_B$.

wherein R_1, R'_1, R_2 and R'_2 are independently hydrogen or an alkyl group containing 1 to 8 carbon atoms; R_3 is an alkylene unit containing from 2 to 12 carbon atoms or is an oxyalkylene group of the following formula:

$$-[(CH_2)_C-O-]_D-(CH_2)_E- \qquad \text{IV}$$

wherein C is an integer in the range of from 2 to about 5, D is an integer in the range of from about 0 to about 2,000, and E is an integer in the range of from about 2 to about 5, except when D is zero, in which case E will be an integer from 2 to 12; R_4 is an alkylene unit containing from 2 to 8 carbon atoms ; A is an integer in the range of from 1 to 2,000; R_5 is selected from the group consisting of $-C(R_6)(R_7)-$, $-(CH_2)_3-O-$, $-CH_2-CH_2-O-CH_2-$, $-CR_8H-CH_2-$, $-(CH_2)_5-$, $-(CH_2)_F-O-C(O)-$ and $-(CH_2)_F-C(O)-CH_2-$; R_6 and R_7 are independently hydrogen or an alkyl containing from 1 to 8 carbon atoms; R_8 is hydrogen or methyl; F is an integer in the range of from 2

to 6; B is an integer in the range of from 1 to n such that the number average molecular weight of formula III is less than about 200,000.

26. The aliphatic polyoxaester of claim 25 wherein R_3 is an oxyalkylene group.

27. The aliphatic polyoxaester of claim 26 wherein the first repeating unit is derived from a dicarboxylic acid selected from the group consisting of 3,6-dioxaoctanedioic acid, 3,6,9-trioxaundecanedioic acid and combinations thereof.

28. The aliphatic polyoxaester of claim 25 wherein the second repeating unit is derived from a diol selected from the group consisting of 1,2-ethandiol, 1,2-propandiol, 1,3-propandiol and combinations thereof.

29. The aliphatic polyoxaester of claim 25 wherein the second repeating unit is derived from ethylene glycol.

30. The aliphatic polyoxaester of claim 25 wherein the second repeating unit is derived from a lactone selected from the group consisting of glycolide, lactide, ε-caprolactone and combinations thereof.

31. The aliphatic polyoxaester of claim 27 wherein the aliphatic polyoxaester has two second repeating units wherein one of the second repeating units is a diol selected from the group consisting of 1,2-ethandiol, 1,2-propandiol, 1,3-propandiol and combinations thereof and the other repeating unit is a lactone selected from the group consisting of glycolide, lactide, ε-caprolactone and combinations thereof.